Claims

1. An archery bow stabilizer comprising:

a hollow body having a longitudinal axis, a first end and a second end;

means for absorbing shock and damping vibration contained within said hollow body adjacent to said first end of said hollow body; and

an attachment element for connecting said shock and vibration damping means to said archery bow, said attachment element including means for attaching said element to said archery bow at a first end and means for attaching said attachment element only to said means for absorbing shock and damping vibration at a second end,

wherein said means for absorbing shock and damping vibration comprises an annular viscoelastic elastomer disposed between said hollow body and said attachment element, said annular viscoelastic elastomer surrounding said attachment element, for preventing transmission of undamped vibrations between said hollow body and said attachment element.

2. An archery bow stabilizer as in claim 1 wherein said elastomer comprises a viscoelastic elastomer having a compression set of less than 15%, an elongation at break of at least 500%, and a recovery after compression which is delayed by at least 0.7 seconds.

3. An archery bow stabilizer as in claim 1 wherein said elastomer comprises a flexible viscoelastic polyurethane of essentially linear structure containing unsatisfied hydroxyl groups.

4. A combination archery bow stabilizer and game tracking device comprising:

a hollow body having a longitudinal axis, a first end and a second opposite end;

means for absorbing shock and damping vibration contained within said holow body in said first end of said hollow body;

an attchment element for connecting said shock and vibration damping means to said archery bow, said attachment element including means for attaching said element to said archery bow at a first end and means for attaching said attachment element only to said means for absorbing shock and damping vibration at a second end, said means for absorbing shock and damping vibration comprises an annular viscoelastic elastomer disposed between said hollow body and said attachment element, said annular viscoelastic elastomer surrounding said attachment element;

a chamber in said second end of said hollow body for storing a spool of tracking line; and

means for retaining said spool of tracking line while allowing said tracking to pay out.

5. A combination archery bow stabilizer and game tracking device as in claim 4 wherein said means for absorbing shock and damping vibration comprises a viscoelastic elastomer.

6. A combination archery bow stabilizer and game tracking device as in claim 5, wherein said viscoelastic elastomer has a compression set of less than 15%, an elongation at break of at least 500%, and a recovery after compression which is delayed by at least 0.7 seconds.

7. A combination archery bow stabilizer and game tracking device as in claim 5, wherein said viscoelastic elastomer comprises a flexible polyurethane of essentially linear structure containing unsatisfied hydroxyl groups.

8. A combination archery bow stabilizer and game tracking device as in claim 4 wherein said attachment element is rotatable through a 360 degree angle about said longitudinal axis of said hollow body.

9. A combination archery bow stabilizer and game tracking device as in claim 4 wherein said attachment element comprises a rod and said means for attaching said attachment element to said means for absorbing shock and damping vibration comprises embedding at least said second end of said rod in said viscoelastic elastomer.

10. A combination archery bow stabilizer and game tracking device as in claim 4 wherein said means for both retaining said spool of tracking line comprises a removable cap having a orifice concentric with said longitudinal axis through which said tracking line is free to pass.

11. A combination archery bow stabilizer and game tracking device as in claim 4 wherein said hollow body is fabricated from a material selected from the group consisting of steel, copper, brass, aluminum, and plastic.

12. A combination archery bow stabilizer and game tracking device comprising:

a hollow cylindrical body having a longitudinal axis, a first end and a second opposite end, an inner surface and an outer surface;

an annular cylinder of viscoelastic elastomer aligned with said longitudinal axis of said hollow body near said first end of said hollow body, said annular cylinder having a central bore;

a rod having a first threaded end for attaching to said archery bow, a middle portion and a second threaded end extending through said central bore of said annular cylinder,

said elastomer being contained within said hollow body and held in compression by a retaining ring in said first end of said hollow body and by a lock-nut on said second end of said rod and said first end of rod extending beyond said first end of said body; and

a chamber for storing a spool of tracking line, said chamber being defined by said inner wall of said hollow body and a cap mounted in said second end of said hollow body,

said cap being detachably mounted to said second end of said hollow body for retaining said spool of tracking line, said cap having a orifice with a central bore concentric with said longitudinal axis of said hollow body for allowing said tracking line to pay out.

13. A combination archery bow stabilizer and game tracking device as in claim 12, wherein said viscoelastic elastomer has a compression set of less than 15%, an elongation at break of at least 500%, and a recovery after compression which is delayed by at least 0.7 seconds.

14. A combination archery bow stabilizer and game tracking device as in claim 12, wherein said viscoelastic elastomer comprises a flexible polyurethane of essentially linear structure containing unsatisfied hydroxyl groups.

15. A combination archery bow stabilizer and game tracking device as in claim 12, further comprising a first rubber washer between said retaining ring and said elastomer and a second rubber washer between said lock washer and said elastomer.

16. A combination archery bow stabilizer and game tracking device as in claim 15, further comprising a first silicone rubber seal between said retaining ring and said first rubber washer and a second silicone rubber seal between said elastomer and said second lock washer.

17. A combination archery bow stabilizer and game tracking device as in claim 12, wherein said cap further comprises a inner surface and an outer surface, and said orifice further comprises a first conical surface extending angularly outward from said bore to said outer surface of said cap and a second conical surface extending angularly outward from said bore to said inner surface of said cap.

18. A combination archery bow stabilizer and game tracking device as in claim 12, wherein said hollow body and said cap are fabricated of a material selected from the group consisting of steel, copper, brass, aluminum, and plastic.

19. An archery bow stabilizer comprising:

a) mounting means for attachment to the bow;

b) a rod affixed to said mounting means and extending forward from said mounting means, said rod having an outer surface;

c) a cylindrical mass disposed around and spaced apart from said rod, said cylindrical mass having an interior surface; and

d) an energy-dissipative medium comprising a viscoelastic elastomer disposed between said rod and said cylindrical mass, said energy-dissipative medium extending radially from said rod to said interior surface of said cylindrical mass for damping vibration and for quieting sound resulting from vibration.

20. An archery bow stabilizer as in claim 19, herein said cylindrical mass has front and rear ends, said rear end being open toward said mounting means and said front end being closed.

21. An archery bow stabilizer as in claim 19, wherein said energy-dissipative medium consists of a viscoelastic elastomer comprising a flexible polyurethane of essentially linear structure containing unsatisfied hydroxyl groups, said energy-dissipative medium having a compression set of less than 15%, an elongation at break of at least 500%, and a recovery after compression which is delayed by at least 0.7 seconds.